

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#9

In re the Application of

Satoru MIYASHITA, Hiroshi KIGUCHI, Tatsuya SHIMODA and Sadao KANBE

Application No.: 09/901,097

Filed: July 10, 2001

Docket No.: 101050.02

For: METHOD OF MANUFACTURING ORGANIC EL ELEMENT, ORGANIC EL  
ELEMENT, AND ORGANIC EL DISPLAY DEVICE

PETITION FOR CONSOLIDATION OF THREE INTERFERENCES

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

This is a petition under 37 C.F.R. §1.182 requesting that three requested interference proceedings be consolidated. Specifically, this Petition requests the consolidation of the interferences resulting from three Requests for Declaration of Interference, concurrently filed in the above-identified Application and co-pending United States Patent Applications having Serial Numbers 09/901,095 and 09/901,126, seeking the declaration of interference between the above mentioned three applications and United States Patent No. 6,087,196 to Sturm et al. (hereinafter "Sturm").

The Applicants respectfully submit that considerations of efficiency, uniformity, expense, and speed in prosecuting the interferences between the above-identified Applications and Sturm can best be satisfied by consolidating the three Requests for Declaration of Interference and collectively and concurrently prosecuting a single interference between Sturm and the above-identified Applications. See the preamble of 37 C.F.R. §1.601 defining a primary

good of the rules as being to secure the just, speedy, and inexpensive determination of every interference.

In each of the above-referenced Applications, a Request for Declaration of Interference with Sturm is filed.

Additionally, the above-referenced Applications and Sturm are directed to similar subject matter. Broadly speaking, the three Applications and Sturm disclose using ink-jet printing to form semiconducting devices including organic semiconducting elements or including polymeric elements. Indeed, Applications with Serial Numbers 09/901,097 and 09/901,095 include claims exactly, and claims substantially, corresponding to each of interference counts 1 and 2 with corresponding claims of Sturm.

Moreover, the above-identified Applications are assigned to a common assignee.

Accordingly, disputed issues between the three Applications and Sturm address similar subject matter between the same two parties.

Therefore, to efficiently, uniformly, and speedily prosecute the Interference between the above-identified Applications and Sturm, the Applicants respectfully request:

- (1) That the three Requests for Declaration of Interference be consolidated, and
- (2) That the resulting interference proceedings between Sturm and the above-referenced three Applications be consolidated.

Attached is our check no. 128238, in the amount of \$130.00, as the petition fee set forth in 37 C.F.R. §1.17(h). If any additional fees are necessary, the U.S. Patent and Trademark Office is authorized to debit Deposit Account No. 15-0461.

Respectfully submitted,

James A. Oliff  
Registration No. 27,075

Hrayr A. Sayadian  
Registration No. 46,491

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Date: February 27, 2002

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<p><b>DEPOSIT ACCOUNT USE AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of

Satoru MIYASHITA, Hiroshi KIGUCHI, Tatsuya SHIMODA and Sadao KANBE

Application No.: 09/901,097

Filed: July 10, 2001

Docket No.: 101050.02

For: METHOD OF MANUFACTURING ORGANIC EL ELEMENT, ORGANIC EL  
ELEMENT, AND ORGANIC EL DISPLAY DEVICE

**REQUEST FOR DECLARATION OF INTERFERENCE**

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

The Applicants hereby respectfully request that an Interference be declared between the above-identified patent application and United States Patent No. 6,087,196 to Sturm et al. (hereinafter "Sturm"), attached to the Information Disclosure Statement filed July 10, 2001.

Specifically, the Applicants request that an Interference be declared between claims 25-46 and 54-77 of the present Application and claims 1-22 and 30-51 of Sturm.

Additionally, the Applicants propose that counts 1, 2, 4, and 5 set forth in Appendices A and B, be made the counts of the Interference. The counts are numbered 1, 2, 4, and 5 to avoid confusion with other counts (numbered differently) of Interferences in Applicants' other Applications, in which corresponding Requests for Declaration of Interference and a are being concurrently filed.<sup>1</sup>

Moreover, the Applicants respectfully request that:

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<sup>1</sup> United States Patent Applications with Serial Numbers 09/901,095 and 09/901,126 are the other Applications in which concurrent Requests for Declaration of Interference are being filed.

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1. claims 25, 26, 29, and 35 of the present Application and claims 1, 2, 5, and 11 of Sturm be designated as corresponding to count 1;
2. claims 27, 30-34, 36-46, and 76 of the present Application and claims 3, 6-10, and 12-22 of Sturm be designated as corresponding to count 2;
3. claims 28, 54-56, and 58 of the present Application and claims 4, 30-32, and 34 of Sturm be designated as corresponding to count 4; and
4. claims 57, 59-75, and 77 of the present Application and claims 33 and 35-51 of Sturm be designated as corresponding to count 5.

The Applicants note that claims 25, 36, 54, and 65 of the present Application are copies of claims 1, 12, 30, and 41, respectively, of Sturm. The Applicants also note that claims 25, 36, 56, and 65 of the present Application (and claims 1, 12, 30, and 41 of Sturm) correspond exactly to counts 1, 2, 4, and 5, respectively.

The Applicants note that claims 14 and 43 of Sturm broadly recite the feature of metallizing said ink-jet printed substrates, which feature has a scope covered by claims 38 and 76, and 67 and 77, respectively, of the present Application.

Attached Appendix A shows the support for features of claims 25-46 and 54-77 in the present Application. Attached Appendix A also shows the support in their Japanese Priority Document, JP 8-313828, filed in Japan on November 25, 1996, for proposed interference counts 4 and 5, and the support in the Japanese Priority Document, at least, for claims 28, 54, 57, and 65 of this Application. Attached Appendix B lays out the rationale for correspondence between counts 1, 2, 4, and 5, claims 25-46 and 54-77 of the present Application, and claims 1-22 and 30-51 of Sturm.

Furthermore, the Applicants respectfully request that the Examiner acknowledge in the Declaration of Interference Applicants' right to the benefit of PCT/JP 97/04283, filed November 25, 1997. Additionally, the Applicants respectfully request that the Examiner

acknowledge in the Declaration of Interference Applicants' right to the benefit of their Japanese Priority Document, JP 8-313828, filed in Japan on November 25, 1996.

Applicants respectfully submit that all of the claims pending in this Application meet the requirements of 35 U.S.C. §135(b), and therefore satisfy 37 C.F.R. §1.607(a)(6), because the preliminary amendment filed on July 10, 2001 (less than one year after issue date of Strum) presented claims to the same subject matter as claims amended after July 11, 2001.

In accordance with 37 C.F.R. §1.607(b), the Applicants respectfully request that examination of the present Application be conducted with special dispatch within the Patent and Trademark Office. Attention is respectfully directed to the Petition For Consolidation of Three Interferences, a copy of which is attached.

Should there be any questions concerning this communication, please telephone the undersigned at the number set forth below.

Respectfully submitted,

James A. Oliff  
Registration No. 27,075

Hrayr A. Sayadian  
Registration No. 46,491

JAO:HAS/tbh

Attachments:

Appendix A  
Appendix B  
Petition

Date: February 27, 2002

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Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
Count 1. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	1. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	25 A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	P3, L9-19: Polymer organic compound. P8, L16-22: ink-jet method, dissolving luminescent in solvent to obtain discharge liquid. P11, L30-L31: luminescent layers are organic compound. P12, L25-P13, L3: Ex. of organic compound. P13, L4-15: precursor prior to conjugation (to form a film) of PPV or its derivative is soluble to water or organic solvent. P14, L17-25: Ex of dyes. P30, L27-32: heat treatment.	
1	2. The process of claim 1, further comprising drying the deposited material to remove said solvent.	26. The process of claim 25, further comprising drying the deposited material to remove said solvent.	P9; P30, L27-32: heat treatment.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
Count 2. A process for making organic light emitting diodes comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	3. The process of claim 1 wherein said organic material is a luminescent polymer.	27. The process of claim 25 wherein said organic material is a luminescent polymer.	P8; P12, L25- P13, L15.	
Count 4. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	4. The process of claim 1 wherein said material includes polyvinylcarbazol film.	28. The process of claim 25 wherein said material includes polyvinylcarbazol film.	P21 discloses using PVK.	P13, ¶22: organic materials; P16, ¶35: ink jetting, organic materials, heat treatment; P19, ¶45-46: organic materials; P22, ¶60-61: organic materials. P 18, ¶41: PVK is ink-jet printed; P23, ¶63: doping dye to PVK.
1	5. The process of claim 1 wherein said solvent is chloroform.	29. The process of claim 25 wherein said solvent is organic.	P13, L5-8 disclose using organic solvent.	



Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
2	6. The process of claim 1 wherein said material includes light emitting dyes.	30. The process of claim 25 wherein said material includes light emitting dyes.	P13, L16-P14, L23 discloses luminescent dyes and one of ordinary skill in the art would know that luminescent dyes are light emitting.	
2	7. The process of claim 6 wherein said light emitting dyes include coumarin and nile red.	31. The process of claim 30 wherein said light emitting dyes include coumarin.	P13, L16- P14, L23 disclose using at least one coumarin based dye.	
2	8. The process of claim 7 wherein said coumarin is coumarin 6.	32. The process of claim 31 wherein said coumarin is coumarin 6.	P15, L11.	
2	9. The process of claim 7 wherein said coumarin is coumarin 47.	33. The process of claim 31 wherein said coumarin is coumarin 1.	P15 discloses using coumarin 1. The disclosures are equivalent because coumarin 1 is the same as coumarin 47.	
2	10. The process of claim 7 wherein said coumarin is coumarin 6 and coumarin 47.	34. The process of claim 31 wherein said coumarin is coumarin 6 and coumarin 1.	P15 discloses using mixtures of the dyes including coumarin 1 and coumarin 6. The disclosures are equivalent because coumarin 1 is the same as coumarin 47.	
1	11. The process of claim 1 wherein said organic material is a mixture of polymers and other organic molecules.	35. The process of claim 25 wherein said organic material is a mixture of polymers and other organic molecules.	P12, L21-P15, L23; P13, L18 discloses mixing polymer with organic dyes.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
2	12. A process for making organic light emitting diodes comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	36. A process for making an organic light emitting diodes comprising the steps of: depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	P1, L5-7. The disclosures are equivalent because the disclosed luminescent structures are provided as a diode structure.	
2	13. The process of claim 12 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.	37. The process of claim 36 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.	Fig. 1, P9, L4-10: blue luminescent layer 108 is continuous sheet. P9, L11-14: blue luminescent layer 108 can be formed by ink-jet method.	
2	14. The process of claim 13 further including the step of metallizing said ink-jet printed substrates.	38. The process of claim 37 further including the step of metallizing said ink-jet printed substrates.	Fig. 1, P10, L28- P11, L5: a cathode (counter electrode) 113 is formed as a metallic thin film electrode on blue luminescent layer 108.	
2	14. The process of claim 13 further including the step of metallizing said ink-jet printed substrates.	76. The process of claim 37 further including the step of metallizing said ink-jet printed organic material.	Fig. 1, P10, L28- P11, L5: a cathode (counter electrode) 113 is formed as a metallic thin film electrode on blue luminescent layer 108.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
2	15. The process of claim 14 further including the step of depositing with ink-jet printing top metal contacts on said substrate.	39. The process of claim 38 further including the step of depositing a top metal contact on said substrate.	P10, L30-P11, L5 discloses forming top metal cathode 113.	
2	16. The process of claim 15 wherein said top metal contacts are deposited through a shadow mask.	40. The process of claim 39 wherein said top metal contact is deposited through a mask.	P29, L25-26 discloses using masking deposition to form the cathode.	
2	17. The process of claim 12 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.	41. The process of claim 36 further including the step of depositing bottom contacts on said substrate.	P7, L13-22 discloses placing electrodes 101-103.	
2	18. The process of claim 15 wherein said top metal contacts are deposited in a pattern.	42. The process of claim 39 wherein said top metal contact is deposited in a pattern.	Inherent P10, L30- P11, L5: cathode 113.	
2	19. The process of claim 17 wherein said bottom metal contacts are deposited in a pattern.	43. The process of claim 41 wherein said bottom contacts are deposited in a pattern.	Inherent P7, L13-22: pixel electrodes 101-103.	
2	20. The process of claim 12 further wherein said organic material includes light emitting dyes.	44. The process of claim 36 further wherein said organic material includes light emitting dyes.	P13, L16- P14, L23 disclose luminescent dyes. The disclosures are equivalent because one of ordinary skill in the art would know that luminescent dyes emit light.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
2	21. The process of claim 20 further including the step of depositing top contacts on said organic material by ink jet printing.	45. The process of claim 44 further including the step of depositing a top contact on said organic material.	Fig. 1, P10, L30- P11, L5 cathode 113 on blue luminescent layer 108.	
2	22. The process of claim 21 further including the step of depositing bottom contacts on said substrate by ink-jet printing.	46. The process of claim 45 further including the step of depositing bottom contacts on said substrate.	P7, L13-22: pixel electrodes 101-103.	
Count 4. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	30. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	54. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, whereby said organic material remains on the substrate.	P12, L25- P13, L3: Ex. of organic compounds; P21 discloses PVK; and P21, discloses Solvent	P13, ¶22: organic materials; P16, ¶35: ink jetting, organic; materials, heat treatment; P19, ¶45-46: organic materials; P22, ¶60-61: organic materials; P 18, ¶41: PVK is ink-jet printed; P23, ¶63: doping dye to PVK.
4	31. The process of claim 30, further comprising drying the deposited material to remove said solvent.	55. The process of claim 54, further comprising drying the deposited material to remove said solvent.	P9; P30 L27-32: heat treatment	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
4	32. The process of claim 30 wherein said organic material is semiconducting.	56. The process of claim 54 wherein said organic material is semiconducting.	P12, L25-P13, L15;	
Count 5. A process for making organic light emitting diodes comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	33. The process of claim 30 wherein said organic material is a luminescent polymer.	57. The process of claim 54 wherein said organic material is a luminescent polymer.	See P8; P12, L25-P13, L15..	P16-P17, ¶35.
4	34. The process of claim 30 wherein said solvent is chloroform.	58. The process of claim 54 wherein said solvent is organic.	P13, L5-8 disclose using organic solvent.	
5	35. The process of claim 30 wherein said material includes light emitting dyes.	59. The process of claim 54 wherein said material includes light emitting dyes.	PP 10 and 14. The disclosures are equivalent because one of ordinary skill in the art would know that luminescent dyes emit light.	
5	36. The process of claim 35 wherein said light emitting dyes include coumarin and nile red.	60. The process of claim 59 wherein said light emitting dyes include coumarin.	P15 discloses using at least one kind of coumarin dye.	
5	37. The process of claim 36 wherein said coumarin is coumarin 6.	61. The process of claim 60 wherein said coumarin is coumarin 6.	P15 discloses coumarin 6.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
5	38. The process of claim 36 wherein said coumarin is coumarin 47.	62. The process of claim 60 wherein said coumarin is coumarin 1	P15 discloses using coumarin 1. The disclosures are equivalent because coumarin 1 is the same as coumarin 47.	
5	39. The process of claim 36 wherein said coumarin is coumarin 6 and coumarin 47.	63. The process of claim 60 wherein said coumarin is coumarin 6 and coumarin 1.	P15 discloses combining various coumarins, including coumarin 1 and 6. The disclosures are equivalent because coumarin 1 is the same as coumarin 47.	
5	40. The process of claim 30 wherein said organic material is a mixture of polymers and other organic molecules.	64. The process of claim 54 wherein said organic material is a mixture of polymers and other organic molecules.	P12, L21-P15, L23; P13, L18 discloses mixing polymer with organic dyes.	
5	41. A process for making organic light emitting diodes comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	65. A process for making organic light emitting diodes comprising the steps of: depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and evaporating the solvent, said organic material remaining on the substrate.	P12, L25- P13, L3: Ex of organic compounds P21 discloses PVK and solvent; P3 discloses making organic electroluminescent elements. The disclosures are equivalent because one of ordinary skill in the art would know that El organic elements that use hole injection and transfer layer are equivalent to light emitting diodes.	P13, ¶22: organic materials; P16, ¶35: ink jetting, organic materials, heat treatment; P19, ¶45-46: organic materials; P22, ¶60-61: organic materials; P6, ¶1: EL devices--provided in the specification as a diode structure. The disclosures are equivalent because one of ordinary skill in the art would know that El organic elements that use hole injection and transfer layer are equivalent to light emitting diodes.

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
5	42. The process of claim 41 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer. 43. The process of claim 42 further including the step of metallizing said ink-jet printed substrates.	66. The process of claim 65 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer. 67. The process of claim 66 further including the step of metallizing said ink-jet printed substrates.	PP 11-13 discloses forming layers and films (= continuous sheet); P13 discloses polymer.	
5	43. The process of claim 42 further including the step of metallizing said ink-jet printed substrates.	67. The process of claim 66 further including the step of metallizing said ink-jet printed substrates.	Fig. 1, P10, L28- P11, L5 discloses that a cathode (counter electrode) 113 is formed into a metallic thin film electrode on blue luminescent layer 108.	
5	43. The process of claim 42 further including the step of metallizing said ink-jet printed substrates.	77. The process of claim 66 further including the step of metallizing said ink-jet printed organic material.	Fig. 1, P10, L28- P11, L5 discloses that a cathode (counter electrode) 113 is formed into a metallic thin film electrode on blue luminescent layer 108.	
5	44. The process of claim 43 further including the step of depositing with ink-jet printing top metal contacts on said substrate. 45. The process of claim 44 wherein said top metal contacts are deposited through a shadow mask.	68. The process of claim 67 further including the step of depositing a top metal contact on said substrate. 69. The process of claim 68 wherein said top metal contact is deposited through a mask.	P10, L30-P11, L5 discloses forming top metal cathode 113. P29, L25-26 discloses using masking deposition to form the cathode.	

Count	Claims of 196 Patent	Claims in 09/901,097	Support in 09/901,097	Support in Priority Doc JP 8-313828
5	46. The process of claim 41 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.	70. The process of claim 65 further including the step of depositing bottom contacts on said substrate.	P7, L13-22 pixel electrodes 101-103.	
5	47. The process of claim 44 wherein said top metal contacts are deposited in a pattern.	71. The process of claim 68 wherein said top metal contact is deposited in a pattern.	Depositing in a pattern is inherent. P10, L30- P11, L5: cathode 113.	
5	48. The process of claim 46 wherein said bottom metal contacts are deposited in a pattern.	72. The process of claim 70 wherein said bottom contacts are deposited in a pattern.	Depositing in a pattern is inherent. P7, L13-22: pixel electrodes 101-103.	
5	49. The process of claim 41 further wherein said organic material includes light emitting dyes.	73. The process of claim 65 further wherein said organic material includes light emitting dyes.	PP 10-14 disclose various luminescent dyes. The disclosures are equivalent because one of ordinary skill in the art would know that luminescent dyes emit light.	
5	50. The process of claim 49 further including the step of depositing top contacts on said organic material by ink jet printing.	74. The process of claim 73 further including the step of depositing a top contact on said organic material.	P10 lines 28-32 discloses depositing top contact.	
5	51. The process of claim 50 further including the step of depositing bottom contacts on said substrate by ink-jet printing.	75. The process of claim 74 further including the step of depositing bottom contacts on said substrate.	P7, L13-22: pixel electrodes 101-103.	



Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
5. The process of claim 1 wherein said solvent is chloroform.	29. The process of claim 1 wherein said solvent is organic.	1	<p>Claim 29 of this Application does not explicitly disclose using chloroform as the organic solvent. However, it is recognized in the art that chloroform dissolves PVK. See, e.g., Zhang (1994), p. 37, first paragraph of section titled "LED device fabrication." Additionally, it would have been obvious to use chloroform as the organic solvent because chloroform has a low boiling point and, therefore, would not require a lot of heating to evaporate. See, e.g., The Merck Index, 12<sup>th</sup> edition, p. 2199 as opposed to various alcohols as shown in Table 17.1 of Organic Chemistry by Morrison and Boyd, 5<sup>th</sup> edition (1987), p. 637.</p> <p>Additionally, features of claim 29 of this Application are anticipated by features of claim 5 of the '196 patent.</p>	<p>Count 1 does not recite using chloroform as the solvent. However, it is well recognized in the chemical arts that dissolving organic material is best performed with organic solvents. Moreover, it is recognized in the art that chloroform dissolves PVK. See, e.g., Zhang (1994), p. 37, first paragraph of section titled "LED device fabrication." Additionally, it would have been obvious to use chloroform as the organic solvent because chloroform has a low boiling point and, therefore, would not require a lot of heating to evaporate. See, e.g., The Merck Index, 12<sup>th</sup> edition, p. 2199 as opposed to various alcohols as shown in Table 17.1 of Organic Chemistry by Morrison and Boyd, 5<sup>th</sup> edition (1987), p. 637.</p> <p>Additionally, features of count 1 are anticipated by features of claim 5 of the '196 patent and claim 29 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
7. The process of claim 6 wherein said light emitting dyes include coumarin and Nile red.	31. The process of claim 30 wherein said light emitting dyes include coumarin.	2	<p>Claim 31 of this Application does not explicitly disclose using coumarin with Nile red. However, both coumarin and Nile red are dyes used in organic light emitting devices because of their spectra. See, e.g., Mori '489, column 24, lines 3-6, and column 40, line 68. Additionally, it would have been obvious to mix coumarin with Nile red to broaden the spectrum of the emitted light. See, e.g., Brinkley '692, column 11, lines 38-54, and Table 3, disclosing combining various organic materials (including inter alia coumarin and oxazine--Nile red--dyes) to broaden the spectrum of emitted light.</p> <p>Additionally, features of claim 31 of this Application are anticipated by features of claim 7 of the '196 patent.</p>	<p>Count 2 does not recite using coumarin with Nile red. However, both coumarin and Nile red are dyes used in organic light emitting devices because of their spectra. See, e.g., Mori '489, column 24, lines 3-6, and column 40, line 68. Additionally, it would have been obvious to mix coumarin with Nile red to broaden the spectrum of the emitted light. See, e.g., Brinkley '692, column 11, lines 38-54, and Table 3 disclosing combining various organic materials (including inter alia coumarin and oxazine--Nile red--dyes) to broaden the spectrum of emitted light.</p> <p>Additionally, features of count 2 are anticipated by features of claim 7 of the '196 patent and claim 31 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
9. The process of claim 7 wherein said coumarin is coumarin 47.	33. The process of claim 31 wherein said coumarin is coumarin 1.	2	<p>Claim 33 of this Application does not explicitly disclose using coumarin 47. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47.</p> <p>Additionally, features of claim 33 of this Application are anticipated by features of claim 9 of the '196 patent of this Application.</p>	<p>Count 2 does not recite using coumarin 47. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47. Additionally, it would be obvious to use coumarin 1 (also recognized as 47) to obtain blue light. See, e.g., Thompson '982, column 3 lines 7-19, column 5 lines 43-54, and references cited therein.</p> <p>Additionally, features of count 2 are anticipated by features of claim 9 of the '196 patent and claim 33 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
10. The process of claim 7 wherein said coumarin is coumarin 6 and coumarin 47.	34. The process of claim 31 wherein said coumarin is coumarin 6 and coumarin 1.	2	<p>Claim 34 of this Application does not explicitly disclose using coumarin 47 and coumarin 6. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47. Additionally, it would have been obvious to combine dyes to broaden the spectrum of emittable wavelengths. See, e.g., Brinkley '692, the abstract, column 2 lines 43-62, column 4 lines 32-43, and column 11 lines 29-54. Additionally, it would have been obvious to mix coumarin 47 and 6 to obtain the specific broadened emittable spectrum including blue (from coumarin 47) and green (from coumarin 6).</p> <p>Additionally, features of claim 2 are anticipated by features of claim 10 of the '196 patent and claim 34 of this Application.</p>	<p>Count 2 does not recite using coumarin 47 and coumarin 6. However, it would have been obvious to mix compounds to broaden the emittable spectrum. See, e.g., Brinkley '692, the abstract, column 2 lines 43-62, column 4 lines 32-43, and column 11 lines 29-54, disclosing combining various organic materials (including inter alia coumarin and oxazine--nile red--dyes) to broaden the spectrum. Additionally, it would have been obvious to mix coumarin 47 and 6 to obtain the specific broadened emittable spectrum including blue (from coumarin 47) and green (from coumarin 6).</p> <p>Additionally, features of count 2 are anticipated by features of claim 10 of the '196 patent and claim 34 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
14. The process of claim 13 further including the step of metallizing said ink-jet printed substrates.	38. The process of claim 37 further including the step of metallizing said ink-jet printed substrates.	2	Claim 38 of this Application is a copy of claim 14 of the '196 patent because the disclosure of the '196 patent does not appear to support metallizing directly on the substrate. For example, col. 4, lines 59-66, discloses forming a metal cathode and col. 5, lines 38-47, discloses forming top contacts on the organic material.	Count 2 does not recite metallizing the ink-jet printed substrate. However, it would have been obvious to metallize the organic film, as the art of the light emitting diode recognizes, to form a cathode and thus permit connecting the formed diode to other circuits. Additionally, the scope of metallizing the printed substrate includes metallizing the organic film.  Additionally, features of count 2 are anticipated by features of claim 14 of the '196 patent and claim 38 of this Application.
14. The process of claim 13 further including the step of metallizing said ink-jet printed substrates.	76. The process of claim 37 further including the step of metallizing said ink-jet printed organic material.	2	Claim 76 of this Application does not explicitly disclose metallizing the ink-jet printed substrate. However, the scope of metallizing the organic film includes metallizing the printed substrate.  Additionally, features of claim 76 of this Application are anticipated by features of claim 14 of the '196 patent.	Count 2 does not recite metallizing the ink-jet printed substrate. However, it would have been obvious to metallize the organic film, as the art of the light emitting diode recognizes, to form a cathode and thus permit connecting the formed diode to other circuits. Additionally, the scope of metallizing the printed substrate includes metallizing the organic film.  Additionally, features of count 2 are anticipated by features of claim 14 of the '196 patent and claim 76 of this Application.

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
15. The process of claim 14 further including the step of depositing with ink-jet printing top metal contacts on said substrate.	39. The process of claim 38 further including the step of depositing a top metal contact on said substrate.	2	<p>Claim 39 of this Application does not disclose depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Claim 39 of this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections. See, e.g., this Application disclosing making plural elements, which leads to depositing plural top contacts.</p> <p>Additionally, features of claim 39 of this Application are anticipated by features of claim 15 of the '196 patent.</p>	<p>Count 2 does not recite depositing a metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit a metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Additionally, because the diode requires electrodes for connection to other circuit elements.</p> <p>Additionally, features of count 2 are anticipated by features of claim 15 of the '196 patent and claim 39 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
16. The process of claim 15 wherein said top metal contacts are deposited through a shadow mask.	40. The process of claim 39 wherein said top metal contact is deposited through a mask.	2	<p>Claim 40 of this Application does not explicitly disclose patterning through a shadow mask. However, it would have been obvious to use a shadow mask as part of the masking to avoid etching the electrode. See, e.g., Tang '380, column 5 lines 62-68, and column 11 line 44 to column 12 line 3.</p> <p>Additionally, features of claim 40 of this Application are anticipated by features of claim 16 of the '196 patent.</p>	<p>Count 2 does not recite patterning through a shadow mask. However, it would have been obvious to use a shadow mask as part of the masking to pattern the electrode to avoid etching the electrode. See, e.g., Tang '380, column 5, lines 62-68, and column 11 line 44 to column 12 line 3.</p> <p>Additionally, features of count 2 are anticipated by features of claim 16 of the '196 patent and claim 40 of this Application.</p>

Claims of '96 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '96 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
17. The process of claim 12 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.	41. The process of claim 36 further including the step of depositing bottom contacts on said substrate.	2	<p>Claim 41 of this Application does not explicitly disclose ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of claim 41 of this Application are anticipated by features of claim 17 of the '96 patent and claim 41 of this Application.</p>	<p>Count 2 does not recite ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 2 are anticipated by features of claim 17 of the '96 patent and claim 41 of this Application.</p>
18. The process of claim 15 wherein said top metal contacts are deposited in a pattern.	42. The process of claim 39 wherein said top metal contact is deposited in a pattern.	2	<p>Claim 42 of this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections.</p> <p>Additionally, features of claim 42 of this Application are anticipated by features of claim 18 of the '96 patent.</p>	<p>Count 2 does not recite depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections.</p> <p>Additionally, features of count 2 are anticipated by features of claim 18 of the '96 patent and claim 42 of this Application.</p>



Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
19. The process of claim 17 wherein said bottom metal contacts are deposited in a pattern.	43. The process of claim 41 wherein said bottom contacts are deposited in a pattern.	2	<p>Claim 43 of this Application does not explicitly disclose ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of claim 43 of this Application are anticipated by features of claim 19 of the '196 patent.</p>	<p>Count 2 does not recite ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 2 are anticipated by features of claim 19 of the '196 patent and claim 43 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
21. The process of claim 20 further including the step of depositing top contacts on said organic material by ink jet printing.	45. The process of claim 44 further including the step of depositing a top contact on said organic material.	2	<p>Claim 45 of this Application does not explicitly disclose depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Claim 45 this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections. See, e.g., this Application disclosing making plural elements, which leads to depositing plural top contacts.</p> <p>Additionally, features of claim 45 of this Application are anticipated by features of claim 21 of the '196 patent.</p>	<p>Count 2 does not recite depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 2 are anticipated by features of claim 21 of the '196 patent and claim 45 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
22. The process of claim 21 further including the step of depositing bottom contacts on said substrate by ink-jet printing.	46. The process of claim 45 further including the step of depositing bottom contacts on said substrate.	2	<p>Claim 46 of this Application does not explicitly disclose ink-jet depositing the bottom contacts. Nevertheless, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of claim 46 of this Application are anticipated by features of claim 22 of the '196 patent.</p>	<p>Count 2 does not recite ink-jet depositing the bottom contacts. Nevertheless, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 2 are anticipated by features of claim 22 of the '196 patent and claim 46 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
34. The process of claim 30 wherein said solvent is chloroform.	58. The process of claim 54 wherein said solvent is organic.	4	<p>Claim 58 of this Application does not explicitly disclose using chloroform as the organic solvent. However, it is well recognized in the chemical arts that dissolving organic material is best performed with organic solvents. Moreover, it is recognized in the art that chloroform dissolves PVK. See, e.g., Zhang (1994), p. 37, first paragraph of section titled "LED device fabrication." Additionally, it would have been obvious to use chloroform as the organic solvent because chloroform has a low boiling point and, therefore, would not require a lot of heating to evaporate. See, e.g., The Merck Index, 12<sup>th</sup> edition, p. 2199 as opposed to various alcohols as shown in Table 17.1 of Organic Chemistry by Morrison and Boyd, 5<sup>th</sup> edition (1987), p. 637.</p> <p>Additionally, features of claim 58 of this Application are anticipated by features of claim 34 of the '196 patent.</p>	<p>Count 4 does not recite using chloroform as the solvent. However, it is well recognized in the chemical arts that dissolving organic material is best performed with organic solvents. Moreover, it is recognized in the art that chloroform dissolves PVK. See, e.g., Zhang (1994), p. 37, first paragraph of section titled "LED device fabrication." Additionally, it would have been obvious to use chloroform as the organic solvent because chloroform has a low boiling point and, therefore, would not require a lot of heating to evaporate. See, e.g., The Merck Index, 12<sup>th</sup> edition, p. 2199 as opposed to various alcohols as shown in Table 17.1 of Organic Chemistry by Morrison and Boyd, 5<sup>th</sup> edition (1987), p. 637.</p> <p>Additionally, features of count 4 are anticipated by features of claim 34 of the '196 patent and claim 58 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
36. The process of claim 35 wherein said light emitting dyes include coumarin and Nile red.	60. The process of claim 59 wherein said light emitting dyes include coumarin.	5	<p>Claim 60 of this Application does not explicitly disclose using coumarin with Nile red. However, both coumarin and Nile red are dyes used in organic light emitting devices because of their spectra. See, e.g., Mori '489, column 24, lines 3-6, and column 40, line 68. Additionally, it would have been obvious to mix coumarin with Nile red to broaden the spectrum of the emitted light. See, e.g., Brinkley '692, column 11, lines 38-54, and Table 3, disclosing combining various organic materials (including inter alia coumarin and oxazine--Nile red--dyes) to broaden the spectrum of emitted light.</p> <p>Additionally, features of claim 60 of this Application are anticipated by features of claim 36 of the '196 patent of this Application.</p>	<p>Count 5 does not recite using coumarin with Nile red. However, both coumarin and Nile red are dyes used in organic light emitting devices because of their spectra. See, e.g., Mori '489, column 24, lines 3-6, and column 40, line 68. Additionally, it would have been obvious to mix coumarin with Nile red to broaden the spectrum of the emitted light. See, e.g., Brinkley '692, column 11, lines 38-54, and Table 3, disclosing combining various organic materials (including inter alia coumarin and oxazine--Nile red--dyes) to broaden the spectrum of emitted light.</p> <p>Additionally, features of count 5 are anticipated by features of claim 36 of the '196 patent and claim 60 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
38. The process of claim 36 wherein said coumarin is coumarin 47.	62. The process of claim 60 wherein said coumarin is coumarin 1.	5	<p>Claim 67 of this Application does not explicitly disclose using coumarin 47. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47. Additionally, it would be obvious to use coumarin 1 (also recognized as 47) to obtain blue light. See, e.g., Thompson '982, column 3 lines 7-19, column 5 lines 43-54, and references cited therein.</p> <p>Additionally, features of claim 67 of this Application are anticipated by features of claim 38 of the '196 patent.</p>	<p>Count 5 does not recite using coumarin 47. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47. Additionally, it would be obvious to use coumarin 1 (also recognized as 47) to obtain blue light. See, e.g., Thompson '982, column 3 lines 7-19, column 5 lines 43-54, and references cited therein.</p> <p>Additionally, features of count 5 are anticipated by features of claim 38 of the '196 patent and claim 67 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
39. The process of claim 36 wherein said coumarin is coumarin 6 and coumarin 47.	63. The process of claim 61 wherein said coumarin is coumarin 6 and coumarin 1.	5	<p>Claim 63 of this Application does not explicitly disclose using coumarin 47 and coumarin 6. However, coumarin 1 is recognized in the art as an alternative name for coumarin 47. See, e.g., Kessler '932 disclosing in claim 21, see column 15 lines 22-23, that coumarin 460 is alternatively called coumarin 1 and coumarin 47.</p> <p>Additionally, it would have been obvious to combine dyes to broaden the spectrum of emittable wavelengths. See, e.g., Brinkley '692, the abstract, column 2 lines 43-62, column 4 lines 32-43, and column 11 lines 29-54. Additionally, it would have been obvious to mix coumarin 47 and 6 to obtain the specific broadened spectrum including blue (from coumarin 47) and green (from coumarin 6).</p> <p>Additionally, features of claim 63 of this Application are anticipated by features of claim 39 of the '196 patent.</p>	<p>Count 5 does not recite using coumarin 47 and coumarin 6. However, it would have been obvious to mix compounds to broaden the emittable spectrum. See, e.g., Brinkley '692, column 11 lines 38-54, disclosing combining various organic materials (including inter alia coumarin and oxazine--nile red--dyes) to broaden the spectrum. Additionally, it would have been obvious to mix coumarin 47 and 6 to obtain the specific broadened emittable spectrum including blue (from coumarin 47) and green (from coumarin 6).</p> <p>Additionally, features of count 5 are anticipated by features of claim 39 of the '196 patent and claim 63 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
43. The process of claim 42 further including the step of metallizing said ink-jet printed substrates.	67. The process of claim 66 further including the step of metallizing said ink-jet printed substrates.	5	Claim 67 of this Application is a copy of claim 43 of the '196 patent because the disclosure of the '196 patent does not appear to support metallizing directly on the substrate. For example, col. 4, lines 59-66, discloses forming a metal cathode and col. 5, lines 38-47, discloses forming top contacts on the organic material.	Count 5 does not recite metallizing the ink-jet printed substrate. However, it would have been obvious to metallize the organic film, forming art of the light emitting diode, to form a cathode and thus permit connecting the formed diode to other circuits. Additionally, the scope of metallizing the printed substrate includes metallizing the organic film.  Additionally, features of count 5 are anticipated by features of claim 43 of the '196 patent and claim 67 of this Application.
43. The process of claim 42 further including the step of metallizing said ink-jet printed substrates.	77. The process of claim 66 further including the step of metallizing said ink-jet printed organic material.	5	Claim 77 of this Application does not explicitly disclose metallizing the ink-jet printed substrate. However, the scope of metallizing the organic film includes metallizing the printed substrate.  Additionally, features of claim 77 of this Application are anticipated by features of claim 14 of the '196 patent.	Count 5 does not recite metallizing the ink-jet printed substrate. However, it would have been obvious to metallize the organic film, forming art of the light emitting diode, to form a cathode and thus permit connecting the formed diode to other circuits. Additionally, the scope of metallizing the printed substrate includes metallizing the organic film.  Additionally, features of count 5 are anticipated by features of claim 43 of the '196 patent and claim 77 of this Application.



Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
44. The process of claim 43 further including the step of depositing with ink-jet printing top metal contacts on said substrate.	68. The process of claim 67 further including the step of depositing a top metal contact on said substrate.	5	<p>Claim 68 of this Application does not explicitly disclose depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Claim 68 of this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections. See, e.g., this Application disclosing making plural elements, which leads to depositing plural top contacts.</p> <p>Additionally, features of claim 68 of this Application are anticipated by features of claim 44 of the '196 patent.</p>	<p>Count 5 does not recite depositing a metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit a metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Additionally, because the diode requires electrodes for connection to other circuit elements. Count 5 does not recite depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections.</p> <p>Additionally, features of count 5 are anticipated by features of claim 44 of the '196 patent and claim 68 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
45. The process of claim 44 wherein said top metal contacts are deposited through a shadow mask.	69. The process of claim 68 wherein said top metal contact is deposited through a mask.	5	<p>Claim 69 of this Application does not explicitly disclose patterning through a shadow mask. However, it would have been obvious to use a shadow mask as part of the masking to avoid etching the electrode. See, e.g., Tang '380, column 5 lines 62-68, and column 11 line 44 to column 12 line 3.</p> <p>Additionally, features of claim 69 of this Application are anticipated by features of claim 45 of the '196 patent.</p>	<p>Count 5 does not recite patterning through a shadow mask. However, it would have been obvious to use a shadow mask as part of the masking to pattern the electrode to avoid etching the electrode. See, e.g., Tang '380, column 5 lines 62-68, and column 11 line 44 to column 12 line 3.</p> <p>Additionally, features of count 5 are anticipated by features of claim 45 of the '196 patent and claim 69 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
46. The process of claim 41 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.	70. The process of claim 65 further including the step of depositing bottom contacts on said substrate.	5	<p>Claim 70 of this Application does not explicitly disclose ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Claim 70 of this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections.</p> <p>Additionally, features of claim 70 of this Application are anticipated by features of claim 46 of the '196 patent.</p>	<p>Count 5 of this Application does not recite ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51. Count 5 does not recite depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections.</p> <p>Additionally, features of count 5 are anticipated by features of claim 46 of the '196 patent and claim 70 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
47. The process of claim 44 wherein said top metal contacts are deposited in a pattern.	71. The process of claim 68 wherein said top metal contact is deposited in a pattern.	5	Inherently met because depositing is in a pattern.  Additionally, features of claim 71 of this Application are anticipated by features of claim 47 of the '196 patent.	Inherently met because depositing is in a pattern.  Additionally, features of count 5 are anticipated by features of claim 47 of the '196 patent and claim 71 of this Application.
48. The process of claim 46 wherein said bottom metal contacts are deposited in a pattern.	72. The process of claim 70 wherein said bottom contacts are deposited in a pattern.	5	Claim 72 of this Application does not explicitly disclose ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.  Additionally, features of claim 72 of this Application are anticipated by features of claim 48 of the '196 patent.	Count 5 does not recite ink-jet depositing metal bottom contacts. Nevertheless, it would have been obvious to deposit metallic bottom contacts because they would lead to stabilized hole injection and longer life operation. See, e.g., Van Slyke (1996), the abstract and Figure 1, showing the deposition of Cu based layer. Additionally, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.  Additionally, features of count 5 are anticipated by features of claim 48 of the '196 patent and claim 72 of this Application.

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
50. The process of claim 49 further including the step of depositing top contacts on said organic material by ink jet printing.	74. The process of claim 73 further including the step of depositing a top contact on said organic material.	5	<p>Claim 74 of this Application does not explicitly disclose depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Claim 74 of this Application does not explicitly disclose depositing plural contacts. However, it would have been obvious to deposit plural contacts to make plural connections. See, e.g., this Application disclosing making plural elements, which leads to depositing plural top contacts.</p> <p>Additionally, features of claim 74 of this Application are anticipated by features of claim 50 of the '196 patent.</p>	<p>Count 5 does not recite depositing the metallic cathode using ink-jet printing. However, it would have been obvious to use ink-jet printing to deposit the metallic cathode because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 5 are anticipated by features of claim 50 of the '196 patent and claim 74 of this Application.</p>

Claims of 196 Patent	Claims in 09/901,097	Correspond to count No.	Rationale for Correspondence Between Claims of '196 Patent and the Claims in 09/901,097	Rationale for Correspondence Between the Claims and the Count
51. The process of claim 50 further including the step of depositing bottom contacts on said substrate by ink-jet printing.	75. The process of claim 74 further including the step of depositing bottom contacts on said substrate.	5	<p>Claim 75 of this Application does not explicitly disclose ink-jet depositing the bottom contacts. Nevertheless, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of claim 75 of this Application are anticipated by features of claim 51 of the '196 patent.</p>	<p>Count 5 does not recite ink-jet depositing the bottom contacts. Nevertheless, it would have been obvious to ink-jet deposit the bottom contacts because of the simplicity and low expense of ink-jet printing. See, e.g., Drummond '248 teaching ink-jet depositing of metals because depositing by the ink-jet method is less expensive and simple. See, e.g., column 4, lines 47-51.</p> <p>Additionally, features of count 5 are anticipated by features of claim 51 of the '196 patent and claim 75 of this Application.</p>